

What is claimed is:

1. A cup type plating apparatus, in which a wafer is plated by supplying plating solution through a liquid-supply tube provided at a bottom center of a plating tank to said wafer placed on an opening at a top of a plating tank while electrically connecting an anode and said wafer connected to a cathode provided in said plating tank, and said anode and said wafer are separated by diaphragm provided in said plating tank, wherein there is provided with a division wall formed between said anode and said wafer in a shape capable of separating said anode and said wafer from each other and having plurality of openings covered with diaphragm.
2. The cup type plating apparatus according to claim 1, wherein a liquid-supply tube receptacle for inserting a liquid supply tube is provided at the center of said division wall, and said openings are provided at equal intervals on a plurality of circles concentric with the liquid-supply tube receptacle.
3. The cup type plating apparatus according to any one of claims 1 and 2, wherein non-conductive caps being shaped to fit in and detachable with respect to the openings are provided.
4. The cup type plating apparatus according to any one of claims 1 to 3, wherein a vent port for discharging gases evolved from said anode is provided at a position facing right beneath said division wall in said plating tank.
5. The cup type plating apparatus according to any one of claims 1 to 4, wherein said apparatus is provided with

separate liquid circulation channels to avoid mixing liquid being supplied into the anode-side plating tank separated by said division wall and liquid being supplied to said wafer through said liquid-supply tube.

6. A cup type plating apparatus, in which a wafer is plated by supplying plating solution through a liquid-supply tube provided at a bottom center of a plating tank to said wafer placed on an opening at a top of the plating tank and electrically connecting an anode and said wafer connected to a cathode provided in said plating tank, said anode and said wafer are separated by diaphragm provided in said plating tank, a wafer-side separate chamber and an anode-side separate chamber are formed above said diaphragm and beneath said diaphragm, respectively,

and a main plating solution circulation channel for charging and discharging plating solution to and from said wafer-side separate chamber and an auxiliary plating solution circulation channel for charging and discharging plating solution to and from said anode side separate chamber are provided separately,

wherein said plating apparatus is provided with a main plating solution reservoir for holding plating solution of said main plating circulation channel and an auxiliary plating solution reservoir for holding plating solution of said auxiliary plating solution circulation channel, and provided with means for sending liquid capable of mutually sending plating solutions held in said main plating solution

reservoir and said auxiliary plating solution reservoir respectively.

7. The cup type plating apparatus according to claim 6, wherein said main and said auxiliary plating solution reservoirs are provided with means for detecting concentration of plating solutions of both said reservoirs, and said means for sending liquid is controlled to adjust the concentration of plating solutions of said main and said auxiliary plating solution reservoirs.

8. A cup type plating apparatus, in which a wafer is plated by supplying plating solution through a liquid-supply tube provided at a bottom center of a plating tank to said wafer placed on an opening at a top of the plating tank while electrically connecting an anode and said wafer connected to a cathode provided in said plating tank, and a flow toward outside the plating tank from a liquid-flow channel is formed in the plating solution supplied in an upward flow from said liquid-supply tube and the plating solution is made contact with said target surface of plating of said placed wafer to complete plating,

wherein said plating apparatus is provided with a means for stirring beneath the target surface of plating of the placed wafer for forcibly stirring the plating solution supplied into the plating tank.

9. The cup type plating apparatus according to claim 8, wherein said means for stirring consists of a donut-shaped disc provided with stirring blades for forcibly altering the flow of plating solution around beneath the periphery of the

target surface of plating, and a driving mechanism capable of holding said disc parallel to the target surface of plating and rotating perpendicularly to the upward flow of the plating solution supplied from the liquid-supply tube.

1. A plating apparatus comprising a liquid-supply tube, a target surface of plating, and a driving mechanism capable of holding said disc parallel to the target surface of plating and rotating perpendicularly to the upward flow of the plating solution supplied from the liquid-supply tube.